SEQUENCE LISTING

<110> ZWIEBEL, LAURENCE J.

<120> MOSQUITO OLFACTORY GENES, POLYPEPTIDES, AND METHODS OF
      USE THEREOF

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<150> 60/264,649
<151> 2001-01-26

<160> 23

<170> PatentIn Ver. 2.1

<210> 1
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Val Glu Pro Ile Asp Gly Ile Val Val Leu Asp Asp Glu Tyr Ile Arg
            35                  40                  45

Asp Asn Arg Lys Val Phe Gly Gln Ile Val Cys Ser Phe Arg Tyr Gly
        50                  55                  60

Arg Glu Glu Asp Glu Val Met Gly Leu Asn Phe Gln Lys Glu Leu Cys
65                  70                  75                  80

Leu Ala Ser Glu Gln Ile Tyr Pro Arg Pro Glu Lys Ser Asp Lys Glu
                85                  90                  95

Gln Thr Lys Leu Gln Glu Arg Leu Leu Lys Lys Leu Gly Ser Asn Ala
            100                 105                 110

Ile Pro Phe Thr Phe Asn Ile Ser Pro Asn Ala Pro Ser Ser Val Thr
        115                 120                 125

Leu Gln Gln Gly Glu Asp Asp Asn Gly Asp Pro Cys Gly Val Ser Tyr
        130                 135                 140

Tyr Val Lys Ile Phe Ala Gly Glu Ser Glu Thr Asp Arg Thr His Arg
145                 150                 155                 160

Arg Ser Thr Val Thr Leu Gly Ile Arg Lys Ile Gln Phe Ala Pro Thr
                165                 170                 175

Lys Gln Gly Gln Gln Pro Cys Thr Leu Val Arg Lys Asp Phe Met Leu
            180                 185                 190

Ser Pro Gly Glu Leu Glu Leu Glu Val Thr Leu Asp Lys Gln Leu Tyr
        195                 200                 205

Leu His Gly Glu Arg Ile Gly Val Asn Ile Cys Ile Arg Asn Asn Ser
        210                 215                 220

Asn Lys Met Val Lys Lys Ile Lys Ala Met Val Gln Gln Gly Val Asp
225                 230                 235                 240

Val Val Leu Phe Gln Asn Gly Ser Tyr Arg Asn Thr Val Ala Ser Leu
                245                 250                 255

Glu Thr Ser Glu Gly Cys Pro Ile Gln Pro Gly Ser Ser Leu Gln Lys
            260                 265                 270
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Val Met Tyr Leu Thr Pro Leu Leu Ser Ser Asn Lys Gln Arg Arg Gly
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Ile Ala Leu Asp Gly Gln Ile Lys Arg Gln Asp Gln Cys Leu Ala Ser
    290                 295                 300

Thr Thr Leu Leu Ala Gln Pro Asp Gln Arg Asp Ala Phe Gly Val Ile
305                 310                 315                 320

Ile Ser Tyr Ala Val Lys Val Lys Leu Phe Leu Gly Ala Leu Gly Gly
                325                 330                 335

Glu Leu Ser Ala Glu Leu Pro Phe Val Leu Met His Pro Lys Pro Gly
            340                 345                 350

Thr Lys Ala Lys Val Ile His Ala Asp Ser Gln Ala Asp Val Glu Thr
            355                 360                 365

Phe Arg Gln Asp Thr Ile Asp Gln Gln Ala Ser Val Asp Phe Glu
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            20              25                  30

Tyr Ile Ala Tyr Gly Trp Ala Leu Arg Ile Met Phe Leu His Leu Tyr
        35                  40                  45

Ala Leu Thr Gln Ala Leu Tyr Phe Lys Asp Val Lys Asp Ile Asn Asp
    50                  55                  60

Ile Ala Asn Ala Leu Phe Val Leu Met Thr Gln Val Thr Leu Ile Tyr
65                  70                  75                      80

Lys Leu Glu Lys Phe Asn Tyr Asn Ile Ala Arg Ile Gln Ala Cys Leu
                85                  90                  95

Arg Lys Leu Asn Cys Thr Leu Tyr His Pro Lys Gln Arg Glu Glu Phe
            100                 105                 110

Ser Pro Val Leu Gln Ser Met Ser Gly Val Phe Trp Leu Met Ile Phe
        115                 120                 125

Leu Met Phe Val Ala Ile Phe Thr Ile Ile Met Trp Val Met Ser Pro
    130                 135                 140

Ala Phe Asp Asn Glu Arg Arg Leu Pro Val Pro Ala Trp Phe Pro Val
145                 150                 155                     160

Asp Tyr His His Ser Asp Ile Val Tyr Gly Val Leu Phe Leu Tyr Gln
                165                 170                 175

Thr Ile Gly Ile Val Met Ser Ala Thr Tyr Asn Phe Ser Thr Asp Thr
            180                 185                 190

Met Phe Ser Gly Leu Met Leu His Ile Asn Gly Gln Ile Val Arg Leu
        195                 200                 205

Gly Ser Met Val Lys Lys Leu Gly His Asp Val Pro Pro Glu Arg Gln
    210                 215                 220

Leu Val Ala Thr Asp Ala Glu Trp Lys Glu Met Arg Lys Arg Ile Asp
225                 230                 235                     240

His His Ser Lys Val Tyr Gly Thr Met Tyr Ala Lys Val Thr Glu Cys
                245                 250                 255

Val Leu Phe His Lys Asp Ile Leu Arg Ile Tyr Leu Arg Ala Ser Met
            260                 265                 270

Arg Val Cys Asn Tyr His Leu Tyr Asp Thr Ala Ala Thr Thr Gly Gly
        275                 280                 285

Asp Val Thr Met Ala Asp Leu Leu Gly Cys Gly Val Tyr Leu Leu Val
    290                 295                 300
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Lys Thr Ser Gln Val Phe Ile Phe Cys Tyr Val Gly Asn Glu Ile Ser
305             310             315             320

Tyr Thr Asp Lys Phe Thr Glu Phe Val Gly Phe Ser Asn Tyr Phe Lys
            325             330             335

Phe Asp Lys Arg Thr Ser Gln Ala Met Ile Phe Phe Leu Gln Met Thr
            340             345             350

Leu Lys Asp Val His Ile Lys Val Gly Ser Val Leu Lys Val Thr Leu
        355             360             365

Asn Leu His Thr Phe Leu Gln Ile Met Lys Leu Ser Tyr Ser Tyr Leu
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<210> 6
<211> 380
<212> PRT
<213> Anopheles gambiae

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Leu Phe Trp Ser Tyr Leu Arg Arg Pro Arg Leu Ser Arg Phe Leu Val
            20              25              30
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Gly Cys Ile Pro Val Ala Val Leu Asn Val Phe Gln Phe Leu Lys Leu
        35              40              45

Tyr Ser Ser Trp Gly Asp Met Ser Glu Leu Ile Ile Asn Gly Tyr Phe
    50              55              60

Thr Val Leu Tyr Phe Asn Leu Val Leu Arg Thr Ser Phe Leu Val Ile
65              70              75              80

Asn Arg Arg Lys Phe Glu Thr Phe Phe Glu Gly Val Ala Ala Glu Tyr
            85              90              95

Ala Leu Leu Glu Lys Asn Asp Asp Ile Arg Pro Val Leu Glu Arg Tyr
        100             105             110

Thr Arg Arg Gly Arg Met Leu Ser Ile Ser Asn Leu Trp Leu Gly Ala
        115             120             125

Phe Ile Ser Ala Cys Phe Val Thr Tyr Pro Leu Phe Val Pro Gly Arg
    130             135             140

Gly Leu Pro Tyr Gly Val Thr Ile Pro Gly Val Asp Val Leu Ala Thr
145             150             155             160

Pro Thr Tyr Gln Val Val Phe Val Leu Gln Val Tyr Leu Thr Phe Pro
            165             170             175

Ala Cys Cys Met Tyr Ile Pro Phe Thr Ser Phe Tyr Ala Thr Cys Thr
            180             185             190

Leu Phe Ala Leu Val Gln Ile Ala Ala Leu Lys Gln Arg Leu Gly Arg
        195             200             205

Leu Gly Arg His Ser Gly Thr Met Ala Ser Thr Gly His Ser Ala Gly
    210             215             220

Thr Leu Phe Ala Glu Leu Lys Glu Cys Leu Lys Tyr His Lys Gln Ile
225             230             235             240

Ile Gln Tyr Val His Asp Leu Asn Ser Leu Val Thr His Leu Cys Leu
            245             250             255

Leu Glu Phe Leu Ser Phe Gly Met Met Leu Cys Ala Leu Leu Phe Leu
            260             265             270

Leu Ser Ile Ser Asn Gln Leu Ala Gln Met Ile Met Ile Gly Ser Tyr
        275             280             285

Ile Phe Met Ile Leu Ser Gln Met Phe Ala Phe Tyr Trp His Ala Asn
    290             295             300

Glu Val Leu Glu Ala Ser Leu Gly Ile Gly Asp Ala Ile Tyr Asn Gly
305             310             315             320

Ala Trp Pro Asp Phe Glu Glu Pro Ile Arg Lys Arg Leu Ile Leu Ile
            325             330             335
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Ile Ala Arg Ala Gln Pro Thr Asp Gly Gly Lys Ile Lys Val Gly Asn
            340             345             350

Val Tyr Pro Met Thr Leu Glu Met Phe Gln Lys Leu Leu Asn Val Ser
        355             360             365

Tyr Ser Tyr Phe Thr Leu Leu Arg Arg Val Tyr Asn
    370             375             380
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<213> Anopheles gambiae

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            20                  25                 30

Met Pro Phe Leu Leu Gln Ile Gln Thr Ile Ala Gly Leu Trp Gly Asp
        35                  40                 45

Arg Ser Gln Arg Tyr Arg Phe Tyr Leu Ile Phe Ser Tyr Phe Cys Ala
    50                  55                 60
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Met Val Val Leu Pro Lys Val Leu Phe Gly Tyr Pro Asp Leu Glu Val
65              70              75              80

Ala Val Arg Gly Thr Ala Glu Leu Met Phe Glu Ser Asn Ala Phe Phe
            85              90              95

Gly Met Leu Met Phe Ser Phe Gln Arg Asp Asn Tyr Glu Arg Leu Val
        100             105             110

His Gln Leu Gln Asp Leu Ala Ala Leu Val Leu Gln Asp Leu Pro Thr
    115             120             125

Glu Leu Gly Glu Tyr Leu Ile Ser Val Asn Arg Arg Val Asp Arg Phe
    130             135             140

Ser Lys Ile Tyr Cys Cys Cys His Phe Ser Met Ala Thr Phe Phe Trp
145             150             155             160

Phe Met Pro Val Trp Thr Thr Tyr Ser Ala Tyr Phe Ala Val Arg Asn
            165             170             175

Ser Thr Glu Pro Val Glu His Val Leu His Leu Glu Glu Glu Leu Tyr
            180             185             190

Phe Leu Asn Ile Arg Thr Ser Met Ala His Tyr Thr Phe Tyr Val Ala
        195             200             205

Ile Met Trp Pro Thr Ile Tyr Thr Leu Gly Phe Thr Gly Gly Thr Lys
    210             215             220

Leu Leu Thr Ile Phe Ser Asn Val Lys Tyr Cys Ser Ala Met Leu Lys
225             230             235             240

Leu Val Ala Leu Arg Ile His Cys Leu Ala Arg Val Ala Gln Asp Arg
            245             250             255

Ala Glu Lys Glu Leu Asn Glu Ile Ile Ser Met His Gln Arg Val Leu
        260             265             270

Asn Cys Val Phe Leu Leu Glu Thr Thr Phe Arg Trp Val Phe Phe Val
        275             280             285

Gln Phe Ile Gln Cys Thr Met Ile Trp Cys Ser Leu Ile Leu Tyr Ile
    290             295             300

Ala Val Thr Gly Phe Ser Ser Thr Val Ala Asn Val Cys Val Gln Ile
305             310             315             320

Ile Leu Val Thr Val Glu Thr Tyr Gly Tyr Gly Tyr Phe Gly Thr Asp
            325             330             335

Leu Thr Thr Glu Val Leu Trp Ser Tyr Gly Val Ala Leu Ala Ile Tyr
            340             345             350

Asp Ser Glu Trp Tyr Lys Phe Ser Ile Ser Met Arg Arg Lys Leu Arg
        355             360             365
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Leu Leu Leu Gln Arg Ser Gln Lys Pro Leu Gly Val Thr Ala Gly Lys
    370                 375                 380

Phe Arg Phe Val Asn Val Ala Gln Phe Gly Lys Met Leu Lys Met Ser
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<213> Anopheles gambiae

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<213> Anopheles gambiae

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<213> Anopheles gambiae

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<213> Anopheles gambiae
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Phe Arg Ser Arg Ile Arg Val Gly Gly Ile Phe Leu Phe Tyr Leu Ile
        35                  40                  45

Phe Leu Val Ile Pro Pro Leu Thr Gly Gly Tyr Thr Asp Gly His Gln
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Arg Val Arg Thr Ser Val Glu Phe Leu Phe Asn Cys Asn Ile Tyr Gly
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Gly Ser Met Phe Phe Ala Tyr Asp Val Ala Thr Phe Gln Ala Phe Ile
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Gln Glu Leu Lys Ser Leu Ser Val Leu Val Cys Ser His Ser Tyr Arg
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Leu Lys Tyr Lys Leu Thr Arg Phe Asn Arg Arg Ala Asp Ile Ile Ala
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Lys Val Gln Thr Thr Cys Met Gly Ala Val Thr Leu Phe Tyr Trp Ile
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Ala Pro Ile Pro Ser Ile Cys Ala His Tyr Tyr Arg Ser Thr Asn Ser
145                 150                 155                 160

Thr Glu Pro Val Arg Phe Val Gln His Leu Glu Val Lys Phe Tyr Trp
                165                 170                 175

Leu Glu Asn Arg Thr Ser Val Glu Asp Tyr Ile Thr Phe Val Leu Ile
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Met Leu Pro Val Val Val Met Cys Gly Tyr Val Cys Asn Leu Lys Val
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Met Thr Ile Cys Cys Ser Ile Gly His Cys Thr Leu Tyr Thr Arg Met
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Thr Ile Glu Met Val Glu Gln Leu Glu Ser Met Ala Ser Ala Glu Arg
225                 230                 235                 240

Thr Ala Ser Ala Ile Arg Asn Val Gly Gln Met His Ser Gly Leu Leu
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Gln Trp Leu Thr Cys Val Leu Asn Trp Ser Ile Ser Leu Ile Tyr Leu
            275             280             285
```

```
Thr Asn Val Gly Ile Ser Leu Gln Ser Val Thr Val Val Val Met Phe
    290             295             300
```

```
Phe Leu Ala Thr Ala Glu Thr Phe Leu Tyr Cys Leu Leu Gly Thr Arg
305             310             315             320
```

```
Leu Ala Thr Gln Gln Gln Leu Leu Glu His Ala Leu Tyr Ala Thr Arg
            325             330             335
```

```
Trp Tyr Asn Tyr Pro Ile Ala Phe Arg Ser Ser Ile Arg Met Met Leu
            340             345             350
```

```
Arg Gln Ser Gln Arg His Ala His Ile Thr Val Gly Lys Phe Phe Arg
        355             360             365
```

```
Val Asn Leu Glu Glu Phe Ser Arg Ile Val Asn Leu Ser Tyr Ser Ala
    370             375             380
```

```
Tyr Val Val Leu Lys Asp Val Ile Lys Met Asp Val Gln Asn Val Ser
385             390             395             400
```

```
Tyr Ser Tyr Phe Thr Leu Leu Arg Arg Val Tyr Asn
            405             410
```

```
<210> 15
<211> 1176
<212> DNA
<213> Anopheles gambiae

<400> 15
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agcttctgtc tgctagtagt tattccgaag gttgccttcg gctatccaga tttagagaca 180
atggttcgcg gaacagctga gctgattttc gaatggaacg tactgtttgg gatgttgctg 240
ttttctctca agctagacga ctatgatgat ctggtgtacc ggtacaagga catatcaaag 300
attgctttcc gtaaggacgt tccctcgcag atgggcgact atctggtacg catcaatcat 360
cgtatcgatc ggttttccaa gatctactgc tgcagccatc tgtgtttggc catcttctac 420
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ccggtcgaac atgtgctaca cctggaggag gagctgtact ggtttcacac ccgcgtctcg 540
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aggcttgtgt cgatgagaat ccagttcatg gaccggctgg acgagcgcga agcggaaaag 720
gaactgatcg aaatcatcgt catgcatcag aaggcgctaa aatgtgtgga gctgttggaa 780
atcatctttc ggtgggtttt tctgggacag ttcatacagt gcgtaatgat ctggtgcagc 840
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gaggcaagtt gttattcgct gacacgtgct gcgtacggta gcctctggta tcgccgttcg 1020
gtttcgattc aacggaagct tcgaatggta ctgcagcgtg cccagaaacc ggtcggcatc 1080
tcggctggga agttttgctt cgtcgacatt gagcagtttg gcaatatggc aaaaacatca 1140
tactcgttct acatcgttct gaaggatcaa ttttaa 1176
```

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<210> 16
<211> 391
<212> PRT
<213> Anopheles gambiae

<400> 16
Met Val Leu Pro Lys Leu Ser Glu Pro Tyr Ala Val Met Pro Leu Leu
 1               5                  10                  15

Leu Arg Leu Gln Arg Phe Val Gly Leu Trp Gly Glu Arg Arg Tyr Arg
                20                  25                  30

Tyr Lys Phe Arg Leu Ala Phe Leu Ser Phe Cys Leu Leu Val Val Ile
            35                  40                  45

Pro Lys Val Ala Phe Gly Tyr Pro Asp Leu Glu Thr Met Val Arg Gly
        50                  55                  60

Thr Ala Glu Leu Ile Phe Glu Trp Asn Val Leu Phe Gly Met Leu Leu
 65                  70                  75                  80

Phe Ser Leu Lys Leu Asp Asp Tyr Asp Asp Leu Val Tyr Arg Tyr Lys
                85                  90                  95

Asp Ile Ser Lys Ile Ala Phe Arg Lys Asp Val Pro Ser Gln Met Gly
            100                 105                 110

Asp Tyr Leu Val Arg Ile Asn His Arg Ile Asp Arg Phe Ser Lys Ile
        115                 120                 125

Tyr Cys Cys Ser His Leu Cys Leu Ala Ile Phe Tyr Trp Val Ala Pro
    130                 135                 140

Ser Ser Ser Thr Tyr Leu Ala Tyr Leu Gly Ala Arg Asn Arg Ser Val
145                 150                 155                 160

Pro Val Glu His Val Leu His Leu Glu Glu Glu Leu Tyr Trp Phe His
                165                 170                 175

Thr Arg Val Ser Leu Val Asp Tyr Ser Ile Phe Thr Ala Ile Met Leu
                180                 185                 190

Pro Thr Ile Phe Met Leu Ala Tyr Phe Gly Gly Leu Lys Leu Leu Thr
        195                 200                 205

Ile Phe Ser Asn Val Lys Tyr Cys Ser Ala Met Leu Arg Leu Val Ala
    210                 215                 220

Met Arg Ile Gln Phe Met Asp Arg Leu Asp Glu Arg Glu Ala Glu Lys
225                 230                 235                 240

Glu Leu Ile Glu Ile Ile Val Met His Gln Lys Ala Leu Lys Cys Val
                245                 250                 255

Glu Leu Leu Glu Ile Ile Phe Arg Trp Val Phe Leu Gly Gln Phe Ile
        260                 265                 270
```

```
Gln Cys Val Met Ile Trp Cys Ser Leu Val Leu Tyr Val Ala Val Thr
    275             280                 285

Gly Leu Ser Thr Lys Ala Ala Asn Val Gly Val Leu Phe Ile Leu Leu
    290             295                 300

Thr Val Glu Thr Tyr Gly Phe Cys Tyr Phe Gly Ser Asp Leu Thr Ser
305             310                 315                 320

Glu Ala Ser Cys Tyr Ser Leu Thr Arg Ala Ala Tyr Gly Ser Leu Trp
                325             330                 335

Tyr Arg Arg Ser Val Ser Ile Gln Arg Lys Leu Arg Met Val Leu Gln
            340             345                 350

Arg Ala Gln Lys Pro Val Gly Ile Ser Ala Gly Lys Phe Cys Phe Val
        355             360                 365

Asp Ile Glu Gln Phe Gly Asn Met Ala Lys Thr Ser Tyr Ser Phe Tyr
    370             375                 380

Ile Val Leu Lys Asp Gln Phe
385             390


<210> 17
<211> 474
<212> DNA
<213> Anopheles gambiae

<400> 17
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gatggcggtg gtgatgacgt ctgctgcgca ccgtttctg ctcgtgagtc agacctttc 120
atttcctgca atatcctgtt tctttcccga ccccacagac ggttagacgg atatatgctg 180
gtaaagtttg tcctcttcat gctgtgcttt ctgatcgagc tgctgatgct gtgtgcgtac 240
ggtgaggata ttgtggaatc gccttggggt gattgatgcc gcttacggtt gcgaatggta 300
ccgggaaggg tcggtggcgt tccatcgatc cgtgctgcaa attatacacc gcagccagca 360
gtccgtcata ctgaccgcat ggaaaatttg gcccatccaa atgagtactt tcagtcagat 420
cctgcaagct tcctggtcct actttaccct cctgaagacc gtctacggga ataa     474


<210> 18
<211> 157
<212> PRT
<213> Anopheles gambiae

<400> 18
Leu Cys Leu Pro Asp Val Ala Ile Ala His Val Leu Phe Arg Ile Arg
  1             5                 10                  15

Gln Cys Thr Leu Asp Gly Gly Gly Asp Asp Val Cys Cys Ala Pro Phe
            20              25                  30

Ser Ala Arg Glu Ser Asp Leu Phe Ile Ser Cys Asn Ile Leu Phe Leu
        35              40                  45

Ser Arg Pro His Arg Arg Leu Asp Gly Tyr Met Leu Val Lys Phe Val
    50              55                  60
```

18

```
Leu Phe Met Leu Cys Phe Leu Ile Glu Leu Leu Met Leu Cys Ala Tyr
 65                 70                 75                 80

Gly Glu Asp Ile Val Glu Ser Pro Trp Gly Asp Glx Cys Arg Leu Arg
                 85                 90                 95

Leu Arg Met Val Pro Gly Arg Val Gly Gly Val Pro Ser Ile Arg Ala
             100                105                110

Ala Asn Tyr Thr Pro Gln Pro Ala Val Arg His Thr Asp Arg Met Glu
         115                120                125

Asn Leu Ala His Pro Asn Glu Tyr Phe Gln Ser Asp Pro Ala Ser Phe
     130                135                140

Leu Val Leu Leu Tyr Pro Pro Glu Asp Arg Leu Arg Glu
145                150                155
```

<210> 19
<211> 1206
<212> DNA
<213> Anopheles gambiae

<400> 19
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atctactttg cggtcaactc ggagaacttc taccggacgc tcgccatctg gaaccagacc 180
aacacgcacc cgctgtttgc cgaatcggac gcccggtacc attcgattgc gctcgccaag 240
atgcggaagc tgctggtgct ggtgatggcc accaccgtcc tgtcggttgt cgcctgggtt 300
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tacacggtgg atataccccg gctgcccatc aagtcctggt atccgtggaa tgcaatgagc 420
ggaccggcgt acattttctc tttcatctac caggtacgtt ggcggaatgg tattatgcga 480
tcgttgatgg agctttcggc ctcgctggac acctaccggc ccaactcttc gcaactgttc 540
cgagcaattt cagccggttc caaatcggag ctgatcatca acgaagaaaa ggatccggac 600
gttaaggact ttgatctgag cggcatctac agctcgaagg cggactgggg cgcccagttc 660
cgtgcgccgt cgacgctgca aacgttcgac gagaatggca ggaacggaaa tccgaacggg 720
cttacccgga agcaggaaat gatggtgcgc agcgccatca agtactgggt cgagcggcac 780
aagcacgttg tacgtctcgt ttcagcaatc ggagatacgt acggtcctgc cctgctgcta 840
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ggtgtcaacg tgtacggatt gaccgtaatc ggatatttgt gctacgcgtt ggctcaggtt 960
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aagtaa                                                            1206
```

<210> 20
<211> 401
<212> PRT
<213> Anopheles gambiae

<400> 20
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Met Val Leu Ile Gln Phe Phe Ala Ile Leu Gly Asn Leu Ala Thr Asn
 1               5                  10                 15
```

```
Ala Asp Asp Val Asn Glu Leu Thr Ala Asn Thr Ile Thr Thr Leu Phe
            20                  25                  30

Phe Thr His Ser Val Thr Lys Phe Ile Tyr Phe Ala Val Asn Ser Glu
        35                  40                  45

Asn Phe Tyr Arg Thr Leu Ala Ile Trp Asn Gln Thr Asn Thr His Pro
    50                  55                  60

Leu Phe Ala Glu Ser Asp Ala Arg Tyr His Ser Ile Ala Leu Ala Lys
65                  70                  75                  80

Met Arg Lys Leu Leu Val Leu Val Met Ala Thr Thr Val Leu Ser Val
            85                  90                  95

Val Ala Trp Val Thr Ile Thr Phe Phe Gly Glu Ser Val Lys Thr Val
            100                 105                 110

Leu Asp Lys Ala Thr Asn Glu Thr Tyr Thr Val Asp Ile Pro Arg Leu
        115                 120                 125

Pro Ile Lys Ser Trp Tyr Pro Trp Asn Ala Met Ser Gly Pro Ala Tyr
    130              ·   135                 140

Ile Phe Ser Phe Ile Tyr Gln Val Arg Trp Arg Asn Gly Ile Met Arg
145                 150                 155                 160

Ser Leu Met Glu Leu Ser Ala Ser Leu Asp Thr Tyr Arg Pro Asn Ser
            165                 170                 175

Ser Gln Leu Phe Arg Ala Ile Ser Ala Gly Ser Lys Ser Glu Leu Ile
            180                 185                 190

Ile Asn Glu Glu Lys Asp Pro Asp Val Lys Asp Phe Asp Leu Ser Gly
        195                 200                 205

Ile Tyr Ser Ser Lys Ala Asp Trp Gly Ala Gln Phe Arg Ala Pro Ser
    210                 215                 220

Thr Leu Gln Thr Phe Asp Glu Asn Gly Arg Asn Gly Asn Pro Asn Gly
225                 230                 235                 240

Leu Thr Arg Lys Gln Glu Met Met Val Arg Ser Ala Ile Lys Tyr Trp
            245                 250                 255

Val Glu Arg His Lys His Val Val Arg Leu Val Ser Ala Ile Gly Asp
            260                 265                 270

Thr Tyr Gly Pro Ala Leu Leu Leu His Met Leu Thr Ser Thr Ile Lys
        275                 280                 285

Leu Thr Leu Leu Ala Tyr Gln Ala Thr Lys Ile Asp Gly Val Asn Val
    290                 295                 300

Tyr Gly Leu Thr Val Ile Gly Tyr Leu Cys Tyr Ala Leu Ala Gln Val
305                 310                 315                 320
```

```
Phe Leu Phe Cys Ile Phe Gly Asn Arg Leu Ile Glu Glu Ser Ser Ser
                325             330                 335

Val Met Lys Ala Ala Tyr Ser Cys His Trp Tyr Asp Gly Ser Glu Glu
            340             345             350

Ala Lys Thr Phe Val Gln Ile Val Cys Gln Gln Cys Gln Lys Ala Met
        355             360             365

Thr Ile Ser Gly Ala Lys Phe Phe Thr Val Ser Leu Asp Leu Phe Ala
    370             375             380

Ser Val Leu Gly Ala Val Val Thr Tyr Phe Met Val Leu Val Gln Leu
385             390             395                 400

Lys
```

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<210> 21
<211> 2272
<212> DNA
<213> Anopheles gambiae

<400> 21
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gggaccaccc gtttatcact atcactatta attaattata atatgctttt gtagcgatca 120
gcctaccggg ttttgtttct ctggatatct taagttccca tttgattatc aagatagaac 180
aacaacttgt accttaaata atcattacgt acccttaatc aacctgtgca tcaaggagtt 240
ttcgcgaaag caaaaatccg attgtctgat gttgtcttga ttccatccga ttcgttactg 300
gttctgcaaa atcgtccaat aatacggcaa tgtccttatc gatgcttgaa tcaacatcac 360
attgtttgca tttcgttttt tgcgtgcaaa tatgttattt gcaaagaagg caaggtaatg 420
tgcttaagag taaatacaat tcgctgtcca tttttgtcc accagtgtgc cagaacccgt 480
gccttttagt ccttcgaata catccgacca gtcagcaagc aagtgcatca tggtgctacc 540
gaagctgtcc gaaccgtacg ccgtgatgcc gcttctacta cgcctgcagc gtttcgttgg 600
gctgtggggt gaacgacgct atcgctacaa gttccggttg gcattttaa gcttctgtct 660
gctagtagtt attccgaagg ttgccttcgg ctatccagat ttagagacaa tggttcgcgg 720
aacagctgag ctgattttcg aatggaacgt actgtttggg atgttgctgt tttctctcaa 780
gctagacgac tatgatgatc tggtgtaccg gtacaaggac atatcaaaga ttggtgcgtg 840
ataatgattg ataaaaggaa cctttgagca actcctatcc ctttcaagct ttccgtaagg 900
acgttccctc gcagatgggc gactatctgg tacgcatcaa tcatcgtatc gatcggtttt 960
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ccagcaccta cctagcgtac ctgggggcac gaaacagatc cgtcccggtc gaacatgtgc 1080
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tgctaaccat cttcagcaac gtgaagtact gttcggcaat gctcaggctt gtggcgatga 1260
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ctcggctggg aagttttgct tcgtcgacat tgagcagttt ggcaatgtat ggggagacct 1920
tccactgtgg caagaaagat tttctttatt aatgcatctt ttaatttaca gatggcaaaa 1980
acatcatact cgttctacat cgttctgaag gatcaatttt aaagggaac tccccacccc 2040
```

```
gaccagacga cggaaagcta acgatgtgca attgaatagt cattagtagc gtttttgctc 2100
gcaaacgaac taaccctttg actttttaag ttcactacgg tgaggacaaa aatcaataaa 2160
ttaaatcgag accgttgatg agcaaaagaa aaaaaaatat tttactgatt ttcatttcgt 2220
tccatcgact acataatcat aattatatgc cacattttat tataagtttt tg          2272
```

```
<210> 22
<211> 931
<212> DNA
<213> Anopheles gambiae

<400> 22
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tgtttctcac tctctctctc tctgtctctc ttattgatgc cgtatgcgcc gcgtgctata 120
ggctagttat gcttaccgga tgttgcgatc gcgcacgtgc ttttccgcat acgccagtgc 180
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cttttcattt cctgcaatat cctgtttctt tcccgacccc acagacggtt agacggatat 300
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gcgtacggtg aggatattgt ggaatcggta aggcaccagg cggtgatgag cgagtcgcga 420
gtaattgaag cttttgcttt taaaacacat cagagccttg gggtgattga tgccgcttac 480
ggttgcgaat ggtaccggga agggtcggtg gcgttccatc gatccgtgct gcaaattata 540
caccgcagcc agcagtccgt catactgacc gcatggaaaa tttggcccat ccaaatgagt 600
actttcagtc aggtgagttg ccaattgatt gccgtttgcg ttaatatttc agtaagagtg 660
cgctctttcc cttagatcct gcaagcttcc tggtcctact ttaccctcct gaagaccgtc 720
tacgggaata agtaagcgcg agagagagag agagagcagt atcgttcacc ctttggatga 780
atcaatagat ttctaatcat gaaccattga aaaatgaatc aacatttttcg ctagttgcac 840
aatattgtac cattctatac agcttcacca cgaccaagcg tttgttgcat caggaccaaa 900
cacgtttcga caagccgcgt cacctgctgg c                                 931
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<210> 23
<211> 11103
<212> DNA
<213> Anopheles gambiae

<400> 23
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aggcaaagaa tgtgcaaagt ttcatttggc ttggttcgtc tgctttgctg tgaacgtgtg 180
cacgggttgca tcgctaaggt ttcggtgtga gccgagaagt tgcagatcga aatctctttg 240
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gctgaaaaat gcaagtccag ccgaccaagt acgtcggcct tcgttgccga cctgatgccg 360
aacattcggg ttgatgcagg ccagcggtca actttctgtt ccggctacgt caccggcccg 420
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gaaaaaatgg gactaaaacc ggtcttcaca gagccaacac attcctacag caattgcata 1380
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gtttcaaggt caatcgagcg ggtgggatc aacttttta ttcattttgc taacgcccca 1620
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cggcaaaaga aaagcgacga ttatgaagat gtccaaacca ttgcccgccc gacgctttat 1740
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caattatacc ctgatgttca tttcattgca ttttgtaagt ttgtgctggt aacgcccgta 1980
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tcctctgcaa acttgtgctt aattaattgg tgcacaataa gtttaaactg tggcggcaga 2160
tgtgtcgctg tccgcttcct tccttcccag caagctcgtg cgaaataatt tattccatca 2220
ttttaataca gccgtttgtg cattttaatt agcaaagcaa tataaaaagc agctaaccat 2280
ccccattaaa acaaagtgct tccgggccca attgttatgg cggtggaaag taatggtttt 2340
accagtggaa gtgtcctttc ccatcgtggg tacttcgcga tattcttgtc ttatacaagt 2400
gcatacagaa aaaaaggaca aatcctcctt gctatggtct aaggccagct tcggtaccgc 2460
ttccgcttcg ggatgtcata aagtttgatg ggtgttttta acattacttc cgctcttaac 2520
cacctaatgg acttttcatg cttgagctaa agttaaacca gccaccagcg gtacgcaccg 2580
agccacggtt gatttcggcg gcggcctcat ccccagtttt gcgccaccaa tattgccttc 2640
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tctctcacac cctcgatctc tctttatttt ctctctctct ctctctctct ctctctctct 3060
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